SECTION D DETERMINATION
CATEGORICAL EXCLUSION (CX) DETERMINATION RFO/CX010-91

Proposed Action OU1 and OU2 Surficial Soil Simulation and Sampling

Location 903 pad area at Rocky Flats Plant Golden CO

Proposed by U S Department of Energy Rocky Flats Office

Description of the Proposed Action

Rocky Flats Plant proposes to study the spatial and vertical distribution of plutonium (Pu) and americium (Am) in soils of remedial investigation areas in the buffer zone within OU1 and OU2 Radionuclide transport in soils is not well understood Pu may become mobile in soils when there is sufficient precipitation to induce leaching within the soil resulting in contamination of subsurface soils and groundwater The area surrounding the 903 pad has been previously characterized as contaminated with both Pu and Am and is suspected to be the source of contamination of the surface soils and surface and groundwater down gradient of the area

The spatial distribution of Pu and Am will be determined by sampling 121 plots in OU1 and OU2 shown on figure 1 A Colorado Department of Health sampler (a device about 4 by 5") will be used to take surface soil samples in each of the 121 plots by hand The sampler removes about a tablespoon of soil each time it is used Approximately 25 samples will be taken in a ten acre area and combined to represent that area

The vertical distribution of Pu will be assessed by sampling 26 soil pits shown on figure 2 (X_1 X_{26}) The distribution of actinides in soil is highly affected by soil characteristics such as moisture content texture density and cohesiveness All of the major soil types east of the 903 pad will be sampled Soil pits (7 ft long x 5 ft wide x 4 ft deep) will be excavated by backhoe in undisturbed or minimally disturbed areas The soil sampling for assessing Pu content with depth will consist of seven samples taken from each pit according to the following scheme the upper 12 cm will be sampled in 3 cm intervals the next 12 cm will be sampled in 6 cm intervals the next 24 cm will be sampled in 12 cm intervals and the remaining 48 cm will be sampled in 24 cm intervals All soil sampling pits will be refilled with the excavated material when sampling is completed

A study of the solute transport in soils will consist of installing soil solution samplers (zero tension samplers fluxmeters tipping bucket gages soil moisture probes and telemetry communication devices) in five of the soil pits (X_1 X_5) to determine the movement of interstitial water and the concentrations of actinides in these waters The soil pits will be refilled leaving the samplers in place After installation of the equipment a sprinkler will be used to spray a solution with the chemical makeup of rain onto the five soil pits from a height of no more than two meters over a period of about one month The area of the spray will include two meters on each side of a pit or a total area of 25 square meters per pit The quantity of solution sprayed will approximate the frequency duration and intensity of natural rainfall received at the plant site in two years based on the historical records of the area Soil solution will be collected and submitted for radionuclide analyses The water samplers will be left in place in the pits from one to three years to track the migration of actinides in the soil under natural precipitation conditions

Soil sampling activities will take place outside wetlands and floodplains The project is planned to commence in June 1991 as part of the Phase II RF/RIFS Work Plan for OU2 Cost of the project is $750 000

Categorical Exclusion to be applied

3 Site characterization and environmental monitoring including siting construction or operation of characterization and monitoring devices under CERCLA and RCRA if the activities would not introduce or cause the inadvertent or uncontrolled movement of hazardous substances as defined in section 101(14) of CERCLA pollutants or contaminants as defined in section 101(14) of CERCLA pollutants or contaminants as defined in section 101(33) of CERCLA or non-native organisms and would not adversely affect sensitive areas as defined in paragraph 4 below (DOE NEPA Guidelines 55 FR 37178)

DOE NEPA REGULATIONS SECTION D DETERMINATION
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I have determined that the proposed action meets the requirements for a categorical exclusion as defined in the Section D of the DOE NEPA Guidelines Therefore I approve the categorical exclusion of the proposed action from further NEPA review and documentation

Date _____ Signature _____

Leo Duffy

Title Director Office of Environmental Restoration & Waste Mgmt

EH 25 has reviewed this determination and has no objection

Date _____ Signature _____

Carol Borgstrom

Title Director Office of NEPA Oversight